

more complex mouse, trackerball, or cursor control device, may use further sensing conductors (as illustrated by **FIG. 29**), including an array of sensing conductors **2** as described in relation to **FIG. 1** (as shown in **FIG. 30**).

[0124] It is also possible to combine input device applications into a single device, such that the function of one or more touch sensitive regions may be changed from operation as a mouse, to a keyboard, to a slide switch, a control switch, a digitising tablet etc, under the action of a software controller.

[0125] As illustrated in **FIG. 31**, in keypad applications for instance, the sensing conductors **2** of the touchpad may be arranged so that each conductor relates to a distinct conductive region **7**, so that a particular region concentrates the electric field of the related conductor towards the corresponding portion of the membrane, to enhance the touch sensitivity of that conductor.

[0126] If the touchpad of the present invention is attached to the case of a portable computing device, such as a laptop computer, the touchpad would make a very effective, rugged and cheap, laptop mouse.

[0127] Although the touchpad of the present invention is ideal for detecting the touch or proximity of a finger by altering the immediate capacitive environment of a touch detection system, it will be recognised that the principle can extend to other types of capacitive proximity sensing devices and touch detection systems.

[0128] Other embodiments are intentionally within the scope of the appended claims.

1. A touchpad comprising a supporting medium supporting a plurality of spaced apart conductors in which there is no electrical contact between the conductors, each conductor being sensitive to the proximity of a finger to modify the capacitance of said conductor to detect the presence of said finger positioned close to that conductor, the touchpad further comprising a means to concentrate electric field between conductors towards the plane of the supporting medium.

2. The touchpad as claimed in claim 1, wherein the means is an electrically conductive medium proximal to said conductors.

3. The touchpad as claimed in claim 1, wherein the means is adapted to locally modify the capacitive environment between a subset of conductors.

4. The touchpad as claimed in claim 1, wherein the means is adapted to accentuate the variation in capacitance of a conductor and to control the dispersion of a resulting capacitive signal propagating from substantially the proximity of said finger.

5. The touchpad as claimed in claim 1, wherein the supporting medium is electrically insulating.

6. The touchpad as claimed in claim 2, wherein the conductive medium is in the form of a conductive layer covering at least a portion of the supporting medium.

7. The touchpad as claimed in claim 6, wherein the conductive layer is discontinuous.

8. The touchpad as claimed in claim 6, wherein the conductive layer is supported by a first surface of the supporting medium or a first surface of a dielectric medium.

9. The touchpad as claimed in claim 8, wherein the dielectric medium has a thickness which is relatively large as compared to the thickness of the conductive layer.

10. The touchpad as claimed in claim 6, further comprising a non-conductive layer proximate to the conductive layer.

11. The touchpad as claimed in claim 8, wherein the supporting medium and conductive layer are separated by the dielectric medium.

12. The touchpad as claimed in claim 8, wherein the conductive layer is sandwiched between the supporting medium and the dielectric medium.

13. The touchpad as claimed in claim 8, wherein the supporting medium is sandwiched between the conductive layer and the dielectric medium.

14. The touchpad as claimed in claim 8, comprising a further conductive layer proximate to the dielectric medium and sandwiching the dielectric medium between the further conductive layer and the conductive layer.

15. The touchpad as claimed in claim 2, wherein the conductive medium has a resistivity in the range of 100 ohms per square to 10,000,000 ohms per square.

16. The touchpad as claimed in claim 2, wherein the conductive medium electrically floats or is grounded to earth.

17. The touchpad as claimed in claim 16, wherein the conductive medium is grounded by a wire or resistor.

18. The touchpad as claimed in claim 6, wherein the conductive layer comprises a plurality of electrically isolated conductive regions separated by regions of the first surface of the supporting medium or first surface of the dielectric medium.

19. The touchpad as claimed in claim 18, wherein the separations between the conductive regions are relatively small compared to the width of the conductive regions, so as to allow capacitive coupling of adjacent regions via the supporting medium or the dielectric medium.

20. The touchpad as claimed in claim 14, wherein the further conductive layer is supported by a second surface of the dielectric medium, the second surface in substantially opposed relation to the first surface of the dielectric medium.

21. The touchpad as claimed in claim 20, wherein the further conductive layer comprises a plurality of electrically isolated conductive regions separated by regions of the second surface of the dielectric medium.

22. The touchpad as claimed in claim 21, wherein the conductive regions on the first surface of the dielectric and the conductive regions on the second surface of the dielectric are registered to each other by virtue of corresponding substantially coterminous areas.

23. The touchpad as claimed in claim 21 wherein the conductive regions on the first surface of the dielectric and the conductive regions on the second surface of the dielectric are registered to each other by virtue of corresponding overlapping non-coterminous areas.

24. The touchpad as claimed in claim 22, wherein the registered regions are capacitively coupled via the dielectric medium.

25. The touchpad as claimed in claim 18, wherein the conductive regions are substantially rectangular.

26. The touchpad as claimed in claim 8, wherein the conductive layer comprises a plurality of electrically isolated conductive regions separated by regions of the first surface of the supporting medium or the first surface of the